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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/986,936	11/13/2001	Petri Koskelainen	59864.00635	6285

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EXAMINER	
PRIETO, BEATRIZ	

ART UNIT	PAPER NUMBER
2142	

DATE MAILED: 01/31/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/986,936	KOSKELAINEN ET AL.	
	Examiner	Art Unit	
	Prieto B.	2142	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10/20/2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-40* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-40* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *13 January 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 5/03 & 11/01
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10/20/05 has been entered.

2. Regarding claims 1, 24 and 34, the term "more efficiently" being a relative term, which may render the claim indefinite, has been interpreted inlight of the specification. In the context of load balancing and what one of ordinary skill in the would reasonable apprise regarding this term. To provide a service "more efficiently" will be interpreted as any method, structure, code or system that would reduce or decrease processing execution time, cost utilization or load of computers, processors and other system resources by distributing workload, task or operations amongst operational computers, processors and other system resources.

3. Regarding claims as amended, there is a strong presumption that an adequate written description of the claimed invention is present in the specification as filed, Wertheim, 541 F.2d at 262, 191 USPQ at 96; however, with respect to newly added or amended claims, applicant should show support in the original disclosure for the new or amended claims. See MPEP § 714.02, and 2163.06. ("Applicant should specifically point out the support for any amendments made to the disclosure.") (see MPEP § 2163 B (II)).

Specifically, regarding claims 1, 24 and 34, the claimed term "load balancing criteria" and/or "criteria" has not been found in applicant's detail description of invention. Thus is not clear how client devices "fulfill load balancing criteria". According the closest written description to this subject matter, the SIP application server software that resides at SIP servers provides the functionality for the SIP server to create URLs on the SIP server as well as the decision making to *determine at the SIP server whether a DST may need to be established (e.g., based on loading and/or location of clients)* [see 044]. Moreover, each branch SIP application server 14, 16, 18, 20 m*ay decide, based on loading or location of clients, to create other branch SIP application servers* [see 0035]. FIG. 4 shows a diagram of initial creation of a DST according to an example embodiment of the present invention. SIP server 40 (at domain orange.com) *because of its large load due to the number of clients/users, or due to the location of some of*

the clients/users, decides to create branch servers to help handle and service some of the users. SIP server 40 may then find out possible other servers via DNS or SLP or otherwise. Once identified and once the SIP server 40 obtains the address of the SIP group server in the particular domain(s), SIP server 40 creates new Universal Resource Locators (URLs) at these servers in the domains (e.g., SIP server 44 at nokia.com). SIP server 40 then redirects one or more of the client/users to SIP server 44 at domain nokia.com [see 0038]. Thus, added claim limitation, "*determining that some of the plurality of clients fulfill load balancing criteria for providing the service more efficiently via at least one second server*".

Claim will be interpreted [AS BEST UNDERSTOOD] as reading, *determining or deciding to providing the service via a second server based on the load of the first server, the number of clients or the location of the clients.*

Claim Rejections - 35 USC § 103

4. Quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action may be found in previous office action.

5. Claims 1-2, 4-15, 19-24, 26-34, 36-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arnold et. al. (US 6,167,449) in view of Rosenberg et al., "SIP: Session Initiation Protocol", Internet Engineering Task Force, in further view of Cardellini, et. al. "Dynamic Load Balancing on Web-Server systems", IEEE (Cardellini hereafter)

6. Regarding to claimed invention, Arnold teaches, the invention that gives an application an ability to search or browse for network services based on the type of service, rather than having to know the name or location of the service of underlying network communication protocol used by the service. The system includes a network look-up procedure that allows client applications to access SIP servers; including Domain Name Service (DNS) and Lightweight Directory Access Protocol (LDAP), as well as Service Location Protocol (SLP), running on top of the Transport Control Protocol/Internet Protocol (TCP/IP). The system includes interface for receiving request for type of service and queries on of the SIP server, the service type includes DNS, FTP, AFP, Mail and etc. The system includes an interface, which is configured to enable client devices to select and request several types of application form SIP servers, from-any receiving request, identifying type of request redirecting request from appropriate type of application from SIP servers, form any domain (DNS) or location of the servers (SLP). Even though, Arnold does not specifically discussed means and steps as claimed, but receiving request, identifying type

of request redirecting request from appropriate type of service in accordance with the request are implicitly disclose by Arnold, see abstract, and col. 3, lines 23-col. 4, lines 1-25.

However, Arnold does not specifically disclose load-balancing mechanism for a Session Initiation Protocol (SIP) server for given service and given stream of that service.

Rosenberg et al teaches Session Initiation Protocol as an application-layer control protocol that can establish, modify and terminate multimedia sessions such as Internet telephony calls. Also, for locating prospective session participants, SIP relies on infrastructure of network host (called "proxy servers") to which user agents can send registrations, invitations to sessions and other requests.

It would have been obvious to one of the ordinary skill in the art at the time of invention to utilize the teaching of SIP protocol of Rosenberg et al because it will provide efficient load-balancing mechanism for a given service and given stream of that service.

However the above-mentioned prior art does not teach *determining or deciding to providing the service via a second server based on the load of the first server, the number of clients or the location of the clients.*

Cardellini teachings related to load distribution teaches a scheduling algorithm that uses a cluster of servers to balance the server nodes load among the servers in the cluster (p. 29). Specifically, implementing policies to select the appropriate server and spread client request among them (p. 29). The scheduling algorithm balances the server nodes load by selecting a server on the basis of system state information. Alternatively, an adaptive algorithm makes the assignment based on dynamic information from the servers and/or the clients. Further, specifically, selecting a server node based on the client load or client location, server load or a combination thereof (p. 30).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the teachings of Cardellini because in using state information, the system can exclude servers that are currently unreachable because of fault or congestion conditions, combined with state collection information in the form of feedback effectively avoids system overload, as suggested by the reference. The adaptive scheme further adequately addresses client request skew and probable heterogeneity of server capabilities, a further indicated by the reference.

7. Regarding claims 8-9, 30-31, and 40, Rosenberg teaches Session Initiation Protocol (SIP) servers, see whole document.

8. Claims 3, 16-18, 25 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arnold-Rosenberg in view of Cardellini, as applied to claims directly above, and further in view of Ahuja et al. 6,175,869.

Ahuja et al teaches a technique for server allocation, which includes dispatch mechanisms for dispatching request to servers based on the servers load (col. 1, line 38-col. 2, line 13; col. 2, lines 42-col. 3, line 20 and col. 4, line 64-col. 6, line 67).

It would have been obvious to include such mechanisms of notion of mechanisms with Arnold in view of Rosenberg for redirecting clients request base of server work load in order to balance load to improving network service efficiency.

Response to arguments

9. Regarding claims 1-2, 4-15, 19-24, 26-34, 36-40 unpatentable over Arnold et. al. in view of Rosenberg et al., it is argued that the applied prior art does not teach claim limitation as added. Specifically, "*determining that some of the plurality of clients fulfill load balancing criteria for providing the service more efficiently via at least one second server*".

In response to the above-mentioned argument, as noted above, claim will be interpreted [AS BEST UNDERSTOOD] as reading, *determining or deciding to providing the service via a second server based on the load of the first server, the number of clients or the location of the clients.* Cardellini teachings implementing policies to select the appropriate server and spread client request among them (p. 29). An adaptive scheduling algorithm makes the assignment based on dynamic information from the servers and/or the clients, specifically, selecting a server node based on the client load or client location, server load or a combination thereof (p. 30).

10. Applicant's arguments filed with the above-mentioned amendment have been fully considered but not found persuasive.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Prieto, B. whose telephone number is (571) 272-3902. The Examiner can normally be reached on Monday-Friday from 6:00 to 3:30 p.m. If attempts to reach the examiner by telephone are unsuccessful, the Examiner's Supervisor, Andrew T. Caldwell can be reached at (571) 272-3868. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3800/4700.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system, status information for published application may be obtained from either Private or Public PAIR, for unpublished application Private PAIR only (see http://pair-direct.uspto.gov or the Electronic Business Center at 866-217-9197 (toll-free).

Any response to this action should be mailed to:
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B. Prieto
Primary Examiner
TC 2100
January 18, 2006

Beatriz Prieto

BEATRIZ PRIETO
PRIMARY EXAMINER
1/18/06